

## ABSTRACT

A novel resonator structure is disclosed which pertains to laser resonator geometries possessing circular symmetry, such as in the case of disk or spherical lasers.

10 The disclosed invention utilizes multi-layer dielectric (MLD) thin film reflectors of unusually high-finesse. These filters are disposed in such a way as to allow selection of low order modes and suppression of parasitic modes while allowing an extremely high cavity Q factor for the modes selected. The invention disclosed, in its preferred  
embodiments, is seen as particularly useful in applications requiring high efficiency in  
15 the production and coupling of coherent radiation. The invention is also well suited for achieving mode selection and narrow line-widths. This is accomplished in a cavity design that is relatively compact and economical.